

REMARKS

Applicants will address each of the objections and rejections in the order in which they appear in the Office Action.

Specification

In the Office Action, the Examiner objects to the specification and in particular, the abstract of the disclosure for an informality therein. Accordingly, Applicants are amending the Abstract of the Disclosure as suggested by the Examiner. Therefore, it is respectfully submitted that this objection has been overcome, and it is respectfully requested that the objection be withdrawn.

Claim Rejections – 35 USC §102

Liao et al.

The Examiner also rejects Claims 1-3 under 35 USC §102(b) as being anticipated by Liao et al. (US 6,717,358). This rejection is respectfully traversed.

More specifically, independent Claims 1 and 2 recite the features of:

“wherein the first layer contains a first substance of which *a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less...*” and

“wherein the second layer contains a third substance of which *a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less...*” (emphasis added).

In the rejection for example, the Examiner contends that Liao discloses tertiary amine compounds (col. 8, lines 16-34) which read on the claimed “first layer.” Applicants respectfully disagree.

In contrast to Liao, the present application discloses in paragraphs [0035]-[0038] and Fig. 1 (of the publication of the present application, US 2008/0241586) first and second layers that comprise, for example, “a quinoxaline derivative that has triphenylamine and heteroaromatic ring in its skeleton” (see paragraph [0038]), wherein “a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less.”

The compounds disclosed in Liao, however, do not appear to have the electron/hole mobility ratios provided by the compounds recited in the present application and claimed in independent Claims 1 and 2.

Therefore, independent Claims 1 and 2 are not disclosed or suggested by Liao, and Claims 1, 2 and those claims dependent thereon are patentable over Liao. Accordingly, it is respectfully requested that this rejection be withdrawn.

Matsumoto et al.

The Examiner also rejects Claims 1-3 under 35 USC §102(a) as being anticipated by Matsumoto et al. (US 2007/0098207). This rejection is also respectfully traversed.

While Applicants traverse this rejection, in order to advance the prosecution of this application, Applicants are amending independent Claims 1 and 2 to recite the feature of “wherein the first layer is in direct contact with the second layer” (emphasis added). This feature is shown, for example, in Fig. 1 of the present application.

In the rejection, the Examiner contends that layer 16 (NPB: vanadium oxide) of Fig. 1 in Matsumoto reads on the claimed “first layer,” and that layer 14 (Alq:Liq) reads on claimed “second layer.” In contrast to Claims 1 and 2, layers 16 and 14 in Matsumoto are not in direct

contact with each other as layers 16 and 14 are separated by aluminum layer 15. Therefore, this claimed feature of Claims 1 and 2 is not disclosed or suggested by Matsumoto.

Therefore, independent Claims 1 and 2 are not disclosed or suggested by Matsumoto, and Claims 1 and 2 are patentable over Matsumoto. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim Rejections – 35 USC §103

Liao in view of Thompson

The Examiner also rejects Claims 11 and 12 under 35 USC §103(a) as being unpatentable over Liao in view of Thompson et al. (US 6,150,043). This rejection is also respectfully traversed.

Each of these claims is a dependent claim. Therefore, for at least the reasons discussed above for the independent claims, each of these claims is also patentable over the cited references. Accordingly, it is respectfully requested that this rejection be withdrawn.

Matsumoto in view of Thompson

The Examiner rejects Claims 11 and 12 under “35 U.S.C. 102(a) as being anticipated by” (sic 35 U.S.C. 103(a) as being unpatentable over) Matsumoto in view of Thompson. This rejection is also respectfully traversed.

Each of these claims is a dependent claim. Therefore, for at least the reasons discussed above for the independent claims, each of these claims is also patentable over the cited references. Accordingly, it is respectfully requested that this rejection be withdrawn.

Double Patenting

US 7,564,052

The Examiner also rejects Claims 1-3, 11 and 12 on the ground of nonstatutory obviousness-type double patenting over claims 1, 2, 4, 5, 7, 8, 10, 11, 17, 18, 20, 21, 23, 24, 26 and 27 of US 7,564,052. This rejection is also respectfully traversed.

More specifically, as mentioned above, independent Claims 1 and 2 recite the features of:

“wherein the first layer contains a first substance of which *a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less...*” and

“wherein the second layer contains a third substance of which *a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less...*” (emphasis added).

None of the claims in the ‘052 patent recite the feature of “a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less.” Therefore, there is no double patenting.

Accordingly, it is respectfully requested that this rejection be withdrawn.

Application No. 10/582,249

The Examiner also rejects Claims 1-3, 11 and 12 on the ground of nonstatutory obviousness-type double patenting over claims 5, 6, 14, 15, 21 of copending Application No. 10/582,249. This rejection is also respectfully traversed.

As explained above, independent Claims 1 and 2 recite the features of:

“wherein the first layer contains a first substance of which *a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less...*” and

“wherein the second layer contains a third substance of which *a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less...*” (emphasis added).

None of the claims in the ‘249 application recite the feature of “a ratio of any one of an electron mobility and a hole mobility to the other one is 100 or less.” Therefore, there is no double patenting.

Accordingly, it is respectfully requested that this rejection be withdrawn.

New Claims

Applicants are adding new dependent Claims 13-16. Claims 13 and 15 recite the feature of “the first layer is in direct contact with the first electrode” while Claims 14 and 16 recite the feature of “the third layer is in direct contact with the second electrode.” These claims are supported by, for example, Fig. 1 of the present application where 801 and 802 represent the first and second electrodes, respectively, and layers 811 and 813 represent the first and third layer, respectively. In Fig. 1, the first layer 811 is in direct contact with the first electrode 801, and the third layer 813 is in direct contact with the second electrode 802. Therefore, no new matter is being added.

As these are dependent claims, they are allowable for at least the reasons discussed above for the independent claims.

Accordingly, it is respectfully requested that these new claims be entered and allowed.

If any fee should be due for these new claims, please charge our deposit account 50/1039.

Conclusion

It is respectfully submitted that the present application is in a condition for allowance and should be allowed.

If any fee should be due for this amendment and/or the new claims, please charge our deposit account 50/1039.

Favorable reconsideration is earnestly solicited.

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